

Appln. No. 10/647,764

Amendment dated: February 10, 2005

Response to Office Action dated: January 21, 2005

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.-22. (Cancelled)

23. (Original) A method for beam forming a radio frequency signal radiated from an antenna using a frequency selective surface, comprising the steps of:

propagating the radio frequency signal through the frequency selective surface;  
dynamically changing the composition of a fluidic dielectric within the frequency selective surface to vary at least one among a permittivity and a permeability in order to vary a propagation delay of said radio frequency signal through the frequency selective surface.

24. (Original) The method according to claim 23, further comprising the step of selectively adding and removing a fluidic dielectric from selected ones of a plurality of cavities of the frequency selective surface in response to a control signal.

25. (Original) The method according to claim 23, wherein the step of dynamically changing the composition of fluidic dielectric comprises the step of mixing fluidic dielectric to obtain a desired permeability and permittivity.

26. (Original) The method according to claim 23, wherein the step of dynamically changing the composition of fluidic dielectric comprises the step adding and removing the fluidic dielectric to obtain a desired permeability and permittivity.

27. (Original) A method of maintaining a constant impedance over a wide frequency range in a phased array antenna having a frequency selective surface, comprising the steps of:

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dynamically changing a composition of a fluidic dielectric within the phased array antenna to vary at least one among array parameters selected from the group comprising coupling among elements of the frequency selective surface, resonances of said elements, and an effective groundplane spacing between said elements and a groundplane; and

operating the phased array antenna over the wide frequency range as the composition of the fluidic dielectric is dynamically changed.

28. (Original) A phased array antenna, comprising:

a frequency selective surface;

means for dynamically changing a composition of a fluidic dielectric within the phased array antenna to vary at least one among array parameters selected from the group comprising coupling among elements of the frequency selective surface, resonances of said elements, and an effective groundplane spacing between said elements and a groundplane;

means for operating the phased array antenna over a wide frequency range as the composition of the fluidic dielectric is dynamically changed while maintaining a constant impedance over the wide frequency range.

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